
 A NEW NAME FOR THE
 WATERLOO ATARI USERS GROUP

In order to reflect the larger area from which the club draws its membership, the Waterloo Atari Users Group has been officially renamed the Blackhawk Atari Computer Enthusiasts. All correspondence, newsletter exchanges, etc., should now be addressed to:

Blackhawk ACE
 204 Cedar Crest Dr.
 Cedar Falls, IA 50613

<<<< JULY MEETING >>>>

The July meeting will be held on Sunday, July 24, at the Waterloo Recreation Center. The meeting will start at 2:30 p.m. Hardware volunteers are asked to arrive at 2:20. Please make an effort not to arrive too early since the officers will be getting together beforehand to get some business out of the way, and it's difficult to get things done if there's a lot of traffic in the room.

We won't be having a regular August meeting, but the room at the Recreation Center will be available on 28 August at 2 p.m. for anyone who wants to get together.

Blackhawk ACE Header Bytes
 by Mike Seavey

At our June meeting at the Waterloo Recreation Center, Ed Fletcher was presented with a GOLD CHIP award in honor of his extensive service to our organization and to many local and more distant ATARI computer owners. As you probably know, Ed is retiring and moving to Colorado Springs. Also at the meeting, Ed Wanat agreed to take over the post of Disk Librarian from Kevin Hazen, and we voted to change our club name from the Waterloo Atari Users Group to the Blackhawk Atari Computer Enthusiasts. This change better suits our growing size and geographical coverage. We have members in Cedar Falls, Dysart, Evansdale, Waterloo, Dubuque, Wellsburg, Gilbertville, Denver, Raymond, Hudson, Dike, and a branch forming in Colorado Springs, Colorado. I hope I didn't miss anyone!

Ed Fletcher demonstrated an Atari 400 with a 64K Mosaic memory board and a full stroke Keyboard installed. Ed showed the bank select features of the Mosaic board and how it gives him a large increase in available VISICALC workspace. Tom Wanat showed the games DONKEY KONG, ZAXXON, and MATCHBOX.

Our July meeting will be held Sunday, 24 July, starting at 2:30PM at the Waterloo Recreation Center, 225 Cedar Street. Stan Ernster is bringing a home made case which makes his ATARI system portable. He may also bring a 48K memory board built from an original ATARI 8K board, if the parts he needs arrive in time. We will have an ATARI MUSIC COMPOSER cartridge available for those who have never seen, heard, or used one. Tom Wanat will show us the games SHADOW WORLD, JUICE, and maybe JUMPMAN JUNIOR, cartridge version.

The positions of Vice President-Program Chairman and Hardware Chairman are still open. We will hold an election to fill these positions in July.

The Analog 12 disk has arrived and will be made available to club members with Analog subscriptions.

Hardware Volunteers for our July meeting are listed below:

NAME	ITEM
Alan Aukes	800, 810 Disk
Stan Ernster	400, 410, 850, TV
Mitch Hass	810 Disk, TV
Don Kramer	410 Cassette
Chuck Hill	810
Jim Renslow	800, 810, Monitor

We could still use 3 more Disk drives, a printer, and another complete system. If you would like to help, please call Mike Seavey, ph 235-9292, or just bring whatever you can.

Hardware volunteers are encouraged to arrive at 2:20PM to allow 10 minutes system setup time.
 TYPO ATTACK

Last month's "Sound Advice" had some unsound errors. My disk drive was not booted so I listed the one liners to my Prowriter (Good Printer, Good Printer) and manually retyped them later into the newsletter article. Well, to err is human, but to fix it up just takes last month's text editor file and a little editing. Are not computers great?

HIGH NOTES

```
10 R=RND(0)*3: SOUND R, R*12*(RND(0)), 10, 6-R: FOR D=1
  TO R*30+5: NEXT D: GOTO 10
```

LOW NOTES

```
10 R=RND(0)*3: SOUND R, 100+R*12*(RND(0)), 10, 5-R:
  GOTO 10
```

HIGH & LOW NOTES

```
10 R=RND(0)*3: SOUND
  R, (R*2)*100+R*12*(RND(0)), 10, 6-R: GOTO 10
```

SOUND EFFECT CORNUCOPIA

```
10 R=RND(0)*3: SOUND
```

```
R,(R/2)*150+R*25*(RND(0)),RND(0)*4+2*R,5-R: GOTO 10
```

COMPUTER MOVIE SOUND TRACK

```
10 F=0: FOR P=250 TO 256 STEP 0.5: SOUND  
0,P+RND(0)*12*(F=0),2,5:F=(F=0): NEXT P: GOTO 10
```

BIRD CHIRPS

```
10 FOR P=2 TO 25:FOR N=1 TO P: SOUND 0,N,10,5: NEXT  
N: NEXT P: GOTO 10
```

SAUCER TAKEOFF

```
10 F=0: FOR P=150 TO 100-F STEP -1: FOR N=P TO  
P-100 STEP -5: SOUND 0,N,10,5: NEXT N: NEXT P:  
F=F+2*(F=50)
```

DOUBLE YOUR PLEASURE, DOUBLE YOUR FUN

I was able to borrow a second disk drive for 4 days this last month. Most Atari owners seem to be on tight budgets. Many are still saving up for their first disk drive or perhaps a printer. Most of us only see a more "maxed" out Atari system at our club meetings or when we pool hardware during a visit to a fellow ATARI owner. I must say that having two drives is the only way to organize a dissarrayed disk library. If two drives is good just what would a "loaded" system be like? I would really like to see an 800 with an 80 column card, 128k ram disk, 64K bank select, and 2 disk drives. Of course we have to have software that can support such accessories. The new ATARI computers will no doubt see an increase in the power, availability, and functions of both Atari and 3rd party "add ons". We have to hope that the prices will get down to the level of Apple II+ board prices that have been in BYTE, etc., of late. Hardware and software firms, we are itching to buy your products, but its hard to buy a \$250 program or a \$300 add on for a computer available for \$400 from TARGET, not counting the \$100 rebate 6 weeks later.

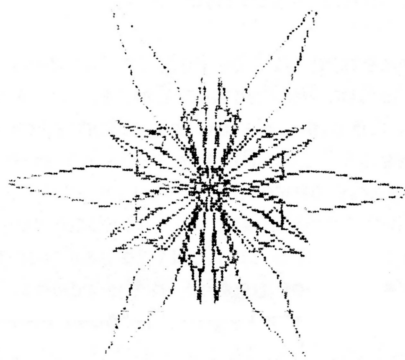
The other side of the coin is of course using what you have to the fullest. Here is where creativity, study, and new software approaches may give more return for some than plunking down bucks for another box to add to the daisy chain. Case in point: consider SAM, SOFTWARE ANIMATED MOUTH, from Don't Ask Software if you need voice output, but cannot afford the ALIEN VOICEBOX or other hardware products. SAM has limitations that are overcome by hardware approaches, but the point here is the idea of using what is already under the hood to the fullest.

While we each save up to upgrade or add on to our existing hardware system and software library, let's not forget to write some programs of our own. Lets study, try things, and see what we can do with the amazing systems we own. I'm sure there is still some untapped power or feature under the hood.

GIVE and TAKE

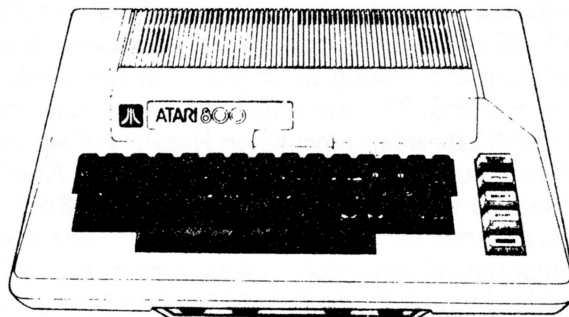
Over the last two monthes we have added the following software to the Blackhawk ACE library: JTERM, AMODEM, SAUCER, CRICKETS, ALIEN, MASTERMIND, CASTLE QUEST, HORSERACE, ALCOHOL, NUMBERLINE, WEEKDAY, MODE10 DRAWING, AND DISKPEEK. These programs were each "downloaded" from a fellow ATARI user group's bulletin board service. We should try to return what we can for what we have recieved. Anyone wishing to help fix up original Blackhawk ACE member written software please contact me. Let's get some of our best programs "ship-shape" and then "upload" them so others can benefit.

We won't be having a regular meeting in August, but the room at the Rec Center will be available to anyone who wants to get together to talk things over.



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Letter From the Editor
John Corley

This is the second newsletter I've edited, so it seems appropriate to give a general policy statement. Okay. My #1 policy is this: I'll print anything that isn't illegal, immoral, obscene, or in questionable taste. That's assuming there's sufficient material to fill the newsletter. If there isn't, the way I define questionable taste can be very flexible.

How about a little help with this thing? There's a limit to the number of topics I can think of to write about, so there's not much chance I'll fill it up myself every month. I suspect that some of you might have thought about writing for the newsletter, but you didn't feel you had anything interesting to say. You're wrong. We have a lot of new members and new Atari owners who can use some help. A short program illustrating some programming principle or some Atari feature, with a little explanation to go along with it, would be of great value. Many members are considering new equipment additions or software purchases, so reviews are always fine. If you buy something good, let people know about it. If you buy a real dog, why let your friends make the same mistake? Anything you want to contribute will be greatly appreciated by me and helpful to at least one or two or a dozen or so other members.

If you're not much of a writer, I'll be glad to help you if I can. At any rate, this is a friendly newsletter, produced by amateurs. We don't expect anything to be of professional quality. (That's probably painfully obvious).

If you don't want to write, but wouldn't mind helping out a little, I'm sure we can find something for you to do. I'd like to have someone volunteer to be our advertising department. The cost of printing and mailing this newsletter takes a significant chunk out of the treasury. If we can defray that cost with a few paid ads then we could use your dues for things like expanding the club library. If you've got a little talent for salesmanship, and wouldn't mind donating a little time and doing a little legwork, you could really do a great service for the club. Let me know if you're interested.

One more thing. How about some feedback? Do you like the newsletter? Do you think the editor ought to be lynched? What sorts of things do you want in here? I'm willing to listen to all comments, even negative ones, though you should know that I have a good friend who has relatives in Sicily. I can think of several things that could be regular features in the newsletter if there's enough interest. We could try a letters column, or

a question and answer column. Is there anyone out there who would consider writing a monthly column for beginners, or a monthly column on graphics, or a monthly column on Atari computers in education? It wouldn't even have to be monthly. For all you hard core gamers, we could track and publish the club high score on the most popular games. Let me know what you want, and most of all, what you're willing to do. If you don't get a chance to talk to me at the meeting, give me a call.

This is a newsletter by the members, for the members, and paid for with the members' money. If the members don't care about it then it's just a waste of time and resources.

Graphics 8 Dump to Prowriter
John Corley

I bought a Prowriter printer not too long ago, and I wanted to try out its graphics capabilities. Though I'd seen several dumps to the Epson, I hadn't come across any for Prowriter, so I sat down to try and write one myself.

The result was listing 1. It works fairly well, but it does have a couple of shortcomings. It's not excruciatingly slow, but it's not particularly fast either, and the image printed is rotated 90 degrees from what you see on the screen.

To understand how it works you have to know a little about how memory for graphics 8 is organized and how the Prowriter does graphics. Graphics 8 permits a single color with two luminances. Each bit of screen memory controls a pixel (one dot on the screen). If the bit is one, then the foreground luminance is used and a point is plotted. If the bit is 0, then the background luminance is used. Since the horizontal resolution is 320 pixels, then 320 bits, or 40 bytes, are required for each graphics 8 screen line. Since there are 192 screen lines then a total of $192 * 40$ or 7680 bytes are required to store the screen information. The bytes are stored sequentially in memory, starting with the upper left hand corner of the screen, then across to the upper right hand corner, down and over to the first byte on the left of the second screen line, and so on to the byte on the bottom right hand corner of the screen.

The Prowriter permits dot addressable graphics. This means that each pin of the print head can be individually addressed to create a graphics pattern. There are nine pins on the print head, arranged in a vertical column. Only the top eight can be addressed. The Prowriter is placed in graphics mode by sending ESCAPE S and a four digit number representing the number of bytes following that should be interpreted as graphics. The printer takes a byte at a time and imposes the bit pattern on the print head, least significant bit at the

top. For instance, if the first byte is 00100011 then the first, second, and sixth pins, counting from the top, will strike the paper. The printer then indexes slightly, and the second byte is printed in a similar manner. This continues until all the graphics bytes have been printed.

The program in listing 1 dimensions string GRSTRNG\$ at 198 to hold 6 bytes for printer setup and 192 bytes for one vertical screen column (one byte each from 192 screen lines). It places the setup codes in the first six bytes of the string then finds the address of screen memory and adds 39 to find the address of the top right hand screen byte. It reads this byte and places the value in the seventh position of GRSTRNG\$. It then adds 40 to the address of the byte just stored to get the address of the screen byte immediately below it. This byte is placed in the eighth position of GRSTRNG\$. When all 192 bytes in the rightmost screen column have been placed in the string in this manner, the entire string is LPRINTED. The initial screen address is decremented by one to find the address of the top byte of the column second from the right on the screen, and the process is repeated. This continues until all 40 screen columns have been printed. If you've been able to follow this somewhat complicated explanation, then you can see why the screen is printed sideways.

As I said before, the routine isn't unbearably slow, but it's no speed demon either. It can be speeded up considerably with a short machine language routine to take over the job of reading the screen bytes and putting them into the string. Now you know what listing 2 is. The two listings are very similar, but a routine is added in line 510 of listing 2 to initialize the string to blanks, and the FOR-NEXT loop in lines 550 to 580 of listing 1 is replaced by the machine language subroutine in line 540 of listing 2. Line 540 reads the DATA statements and puts the values in string MLROUTINE\$. This is only necessary because we can't print the characters that comprise the string in the newsletter. If you like, you can run the routine then type PRINT "540 MLROUTINE\$="; CHR\$(34);MLROUTINE\$;CHR\$(34) and hit return. Move the cursor up to new line 540 and hit return again, then delete lines 600 and 610 containing the data statements.

If you try both routines, you'll see what a difference the assembly language subroutine makes. Listing 1 will dump a graphics 8 screen in just over 2-1/2 minutes. Listing 2 will dump a screen in about 20 seconds.

That takes care of the speed problem, but the program still prints the pictures sideways. That doesn't bother me. If it bothers you, then you might take a look at the January-February issue of

"Ad-Astra". It contains a short BASIC routine, originally published in A.N.A.L.O.G., that uses locate statements to read the individual screen bits, then dump them to the printer one at a time. This prints the picture right side up, but you'll be able to take a short nap while you're waiting for the process to complete itself. Like listing 1, this could also be improved with an assembly language subroutine. If anyone out there feels inclined to write one I'll be glad to use it.

Listing 1

```
499 REM ESC MEANS HIT ESCAPE KEY TWICE
500 DIM GRSTRNG$(198):LPRINT "ESCT15"
510 SCRNADDRESS=PEEK(88)+PEEK(89)*256
520 GRSTRNG$(1,6)="ESCS0192"
530 FOR STARTBYTE=SCRNADDRESS+39 TO
    SCRNADDRESS STEP -1
540 SCRNBYTE=STARTBYTE
550 FOR STRINGPOS=7 TO 198
560 GRSTRNG$(STRINGPOS,STRINGPOS)=
    CHR$(PEEK(SCRNBYTE))
570 SCRNBYTE=SCRNBYTE+40
580 NEXT STRINGPOS
590 LPRINT GRSTRNG$
600 NEXT STARTBYTE
610 LPRINT "ESCA"
```

Listing 2

```
499 REM ESC MEANS HIT ESCAPE KEY TWICE
500 DIM GRSTRNG$(198),MLROUTINE$(50)
    :LPRINT "ESCT15"
510 GRSTRNG$=" ":GRSTRNG$(198)=" "
    :GRSTRNG$(2)=GRSTRNG$
520 SCRNADDRESS=PEEK(88)+PEEK(89)*256
530 GRSTRNG$(1,6)="ESCS0192"
540 FOR X=1 TO 43:READ A
    :MLROUTINE$(X,X)=CHR$(A):NEXT X
550 FOR STARTBYTE=SCRNADDRESS+39 TO
    SCRNADDRESS STEP -1
560 X=USR(ADR(MLROUTINE$),STARTBYTE,
    ADR(GRSTRNG$)+6)
570 LPRINT GRSTRNG$
580 NEXT STARTBYTE
590 LPRINT "ESCA"
600 DATA 104,104,133,206,104,133,205,104,133,
    208,104,133,207,162,0,160,0,161,205,145,207,
    200,192,192,240,16
610 DATA 165,205,24,105,40,133,205,165,206,105,
    0,133,206,24,144,231,96
```


BLACKHAWK

Atari Computer Enthusiasts

Member Survey

Name_____Phone_____

Address_____

City_____State_____Zip_____

Equipment owned:

Computer(s)_____Disk Drive(s)_____

Printer(s)_____Modem(s)_____

Cassette(s)_____Other_____

Programming proficiency (B=beginner, I=intermediate, A=advanced)

BASIC___PILOT___LOGO___Assembly___FORTH___Other_____

Software Owned:

Languages_____

Word Processor_____Data Base_____

Home Finance_____Other_____

Favorite Games_____

Comments:_____

This form essentially duplicates the membership application we began using at the last meeting. We're asking all current members to fill it out and return it at the next meeting, or mail it in if you're not going to be there. This will serve several purposes. It will give us consistent information on all current and future members; it will enable us to check and update our mailing list; and it will help us determine just what the club should be doing and where it should be going. Don't forget the comments section. Tell us what you want from the club, what you're willing to do for the club, what you'd like to see in the newsletter, or anything else.

Seavey, Mike

Blackhawk ACE
204 Cedar Crest Dr.
Cedar Falls, IA. 50613

PUBLICATION POLICY

The Blackhawk Atari Computer Enthusiasts Newsletter will be published once each month except August and December. It is distributed to members and to other Atari users groups who provide copies of their newsletter.

Members may place three line adds (150 characters) of a noncommercial nature free of charge. Commercial advertisements will be accepted at the rate of \$10.00 per issue for half column adds or three issues for \$25.00, and \$20.00 per issue for full column or half page adds or three issues for \$50.00. Send camera ready copy and check to Blackhawk ACE, 204 Cedar Crest Dr., Cedar Falls, Ia. 50613.

Blackhawk Atari Computer Enthusiasts officers

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SECRETARY-----	Mitch Haas	
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EDITOR-----	John Corley	277 6817
DISK LIBRARIAN-----	Ed Wanat	234 6813
CASSETTE LIBRARIAN-----	Don Kramer	232 4881

Annual dues are \$10.00. Membership includes a subscription to the newsletter and use of the club library.

Meetings are held the fourth Sunday of each month, except August and December, at 2:30 P.M. at the Waterloo Recreation Center.

This group is not in any way affiliated with the Atari Company.